

REMARKS / ARGUMENTS

I. General Remarks

Please consider the application in view of the following remarks. Applicants thank the Examiner for his careful consideration of this application.

II. Disposition of Claims

Claims 1-3, 5-15, and 17-23 are pending in this application.

Claims 1, 11, 13, 17, 18, and 22 have been amended in this response. These amendments are supported by the specification as filed. Claims 4 and 16 have been cancelled in this response. Claims 24-35 were cancelled in Applicants' previous response.

Claims 1-3, 5-7, 9, and 13-15 stand rejected under 35 U.S.C. § 102(b). Claims 8, 10-12, and 17-23 stand rejected under 35 U.S.C. § 103(a).

III. Rejections of Claims Under § 102(b)

A. Rejections of Claims Under § 102(b) over U.S. Patent No. 5,380,706

Claims 1-3, 5-7, and 9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,380,706 to Himes *et al.* ("*Himes I*"). With respect to *Himes I*, the Examiner states that:

[*Himes I*] teaches in . . . a method of treating a subterranean zone penetrated by a well bore comprising the steps of: (a) preparing or providing a subterranean zone treating fluid comprising an aqueous fluid, one or more salts and an additive for preventing the swelling and migration of formation clays in said subterranean zone where the additive is 1-carboxy-N,N,N-trimethyl methanaminium chloride, and (b) introducing said treating fluid into said subterranean zone. The reference also teaches that the aqueous fluid is fresh water.

(See Final Office Action at ¶ 2.) The Examiner further states that *Himes I* "teaches the use of salts in column 3, lines 60-67. It teaches that it is used in lesser amounts than previous inventions, but is still taught." (See Final Office Action at ¶ 8.) Applicants respectfully traverse these rejections.

In order to form a basis for a rejection under 35 U.S.C. § 102(b), a prior art reference must disclose each and every element as set forth in the claim. MANUAL OF PATENT EXAMINING PROCEDURE § 2131 (2004). As amended herein, claim 1 includes a limitation that the treating fluid used in the methods of the present invention comprise one or more salts in an amount up to about 3.5% by weight of the aqueous fluid. *Himes I* does not disclose the use of

treating fluids that comprise one or more salts in this amount. Rather, the passage in *Himes I* cited by the Examiner discusses how the "overall halide content" (i.e., concentration of halide anion that is paired with the quaternary ammonium cations) of the fluids disclosed therein may be lower than that of conventional fluids comprising halide salts. (See *Himes I* at col. 3, ll. 60-67.) This does not teach or disclose that the fluids described in *Himes I* may comprise one or more salts, apart from an additive for preventing the swelling and migration of formation clays, in the amount recited in claim 1, as amended herein. *Himes I* therefore does not teach or suggest all elements of claim 1, as amended herein, and thus this claim is allowable over *Himes I*. Moreover, since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 2, 3, 5-7, and 9 depend, directly or indirectly, from claim 1, these dependent claims are allowable for at least the same reasons. See 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of these rejections.

B. Rejections of Claims Under § 102(b) over U.S. Patent No. 5,197,544

Claims 13-15 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,197,544 to Himes ("*Himes II*"). With respect to *Himes II*, the Examiner states that:

[*Himes II*] teaches in column 3, line 3 - column 7, line 44 a method of treating a subterranean zone penetrated by a well bore comprising: preparing or providing a subterranean zone fracturing fluid comprising an aqueous fluid, a gelling agent, one or more salts, and an additive for preventing the swelling and migration of formation clays in said subterranean zone where the additive is 1-carboxy-N,N,N-trimethyl methanaminium chloride; introducing said fracturing fluid into said subterranean zone at a rate and pressure sufficient to form one or more fractures in said zone; and recovering said fracturing fluid from said zone. The reference also teaches that the aqueous fluid is fresh water.

(See Final Office Action at ¶ 3.) The Examiner further states that *Himes II* "teaches the use of salts in column 3, lines 20-33. The references does say that the 'salts can be difficult to use and can have detrimental effects . . . [on the] gelling in fresh water.' However, in the next few lines, the references goes on to teach that the salts are used because of the ion-exchange properties of the clays present in the subterranean formation." (See Final Office Action at ¶ 8.) Applicants respectfully traverse these rejections.

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In order to form a basis for a rejection under 35 U.S.C. § 102(b), a prior art reference must disclose each and every element as set forth in the claim. MANUAL OF PATENT EXAMINING PROCEDURE § 2131 (2004). As amended herein, claim 13 includes a limitation that the fracturing fluid used in the methods of the present invention comprise one or more salts in an amount up to about 3.5% by weight of the aqueous fluid. *Himes II* does not disclose the use of fracturing fluids that comprise one or more salts in this amount. The passage in *Himes II* cited by the Examiner merely states that fluids used heretofore in the art have included water soluble inorganic salts, and that these salts have been used in the art because of "the ability of these chemicals to provide some degree of formation stabilization" (See *Himes II* at col. 3, ll. 20-33.) However, *Himes II* does not describe a fluid that comprises both one or more salts and an additive for preventing the swelling and migration of formation clays, as recited in claim 13. Nor does *Himes II* teach or disclose a fluid that comprises one or more salts in an amount up to about 3.5% by weight of the aqueous fluid, as recited in claim 13, as amended herein. *Himes II* therefore does not disclose the methods recited in claim 13, as amended herein, and thus this claim is patentable over *Himes II*. Moreover, since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 14 and 15 depend from claim 13, these dependent claims are allowable for at least the same reasons. See 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of these rejections.

IV. Rejections of Claims Under § 103(a)

A. Rejections of Claims Under § 103(a) over *Himes I* in View of U.S. Patent No. 5,305,832

Claims 8 and 10-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Himes I* in view of U.S. Patent No. 5,305,832 to Gupta *et al.* ("*Gupta*"). With respect to the combination of *Himes I* and *Gupta*, the Examiner states that:

[*Himes I*] teaches the features as claimed except the use of carboxymethylhydroxypropyl guar as the gelling agent or the use of a cross-linking agent. [*Gupta*] teaches in column 2, line 37 - column 5, line 22 the use of carboxymethylhydroxypropyl guar as the gelling agent and the use of a zirconium or titanium cross-linked guar. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified [the method of *Himes I*] by including a carboxymethylhydroxypropyl guar as the gelling agent and the use of a zirconium or titanium cross-linked guar in view of the

teachings of [Gupta]. The motivation for the combination of these two references is that these additional materials of [Gupta] minimizes the effect of thermal degradation of the gelling polymer in high temperature formations.

(See Final Office Action at ¶ 5.)

To form a basis for a § 103(a) rejection, a combination of prior art references must teach or suggest each element in the claim. MANUAL OF PATENT EXAMINING PROCEDURE § 2142 (2004). However, as discussed in Section III.A. above, *Himes I* does not teach or suggest the use of a fracturing fluid that comprises both an additive for preventing the swelling and migration of formation clays and one or more salts in an amount up to about 3.5% by weight of the aqueous fluid, as recited in claim 1. Nor does *Gupta* teach the use of either of these components, as *Gupta* merely discloses fracturing fluids that comprise crosslinked gelling agents at certain pH ranges. (See *Gupta* at col. 2, ll. 43-50.) Because this combination of references does not teach all elements of claim 1, the combination cannot obviate claim 1. Since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 8 and 10-12 depend, directly or indirectly, from claim 1, these dependent claims each include the limitations of claim 1 that neither *Himes I* nor *Gupta* teaches or suggests. See 35 U.S.C. § 112 ¶ 4 (2004). Therefore, Applicants respectfully assert that claims 8 and 10-12 are allowable over the combination of *Himes I* and *Gupta*, and respectfully request the withdrawal of the rejections thereto.

B. Rejections of Claims Under § 103(a) over *Himes II* in View of *Himes I*

Claims 17, 18, and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Himes II* in view of *Himes I*. With respect to the combination of *Himes I* and *Himes II*, the Examiner states that:

[*Himes II*] teaches the features as claimed except the use of specific viscosity increasing gelling agents. [*Himes I*] teaches in column 6, line 56 - column 7, line 10 the use of polyacrylamide and hydroxyethylcellulose as viscosity increasing gelling agents. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified [the method of *Himes II*] by including polyacrylamide and hydroxyethylcellulose as viscosity increasing gelling agents in view of the teachings of [*Himes I*]. The motivation for the combination of these two references is that [*Himes II*] mentions the use of viscosity affecting gelling agents, but does not name

specific materials. [*Himes I*] does list specific viscosity increasing gelling agents.

(See Final Office Action at ¶ 6.)

To form a basis for a § 103(a) rejection, a combination of prior art references must teach or suggest each element in the claim. MANUAL OF PATENT EXAMINING PROCEDURE § 2142 (2004). However, as discussed in Section III. above, neither *Himes I* nor *Himes II* teach or suggest the use of a fracturing fluid that comprises both an additive for preventing the swelling and migration of formation clays and one or more salts in an amount up to about 3.5% by weight of the aqueous fluid, as recited in claim 13. In fact, *Himes II* teaches against adding salts since they “can be difficult to use and can have detrimental effects upon certain properties of the gelled fluid such as reducing the viscosity produced by a gelling agent in the aqueous fluid in comparison to the viscosity produced by the gelling agent in fresh water.” (See *Himes II* at col. 3, ll. 19-29.) Therefore, one of ordinary skill in the art would not understand from these references, either alone or in combination, to use a fracturing fluid that comprises both an additive for preventing the swelling and migration of formation clays and one or more salts in an amount up to about 3.5% by weight of the aqueous fluid, as recited in claim 13.

Because this combination of references does not teach all elements of claim 13, the combination cannot obviate claim 13. Since “a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers,” and since claims 17, 18, and 20 depend from claim 13, these dependent claims each include the limitations of claim 13 that neither *Himes I* nor *Himes II* teaches or suggests. See 35 U.S.C. § 112 ¶ 4 (2004). Therefore, Applicants respectfully assert that claims 17, 18, and 20 are allowable over the combination of *Himes I* and *Himes II*, and respectfully request the withdrawal of the rejections thereto.

C. Rejections of Claims Under § 103(a) over *Himes II* in View of *Gupta*

Claims 19 and 21-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Himes II* in view of *Gupta*. With respect to this rejection, the Examiner states that:

[*Himes II*] teaches the features as claimed except the use of carboxymethylhydroxypropyl guar as the gelling agent or the use of a cross-linking agent. [*Gupta*] teaches in column 2, line 37 - column 5, line 22 the use of carboxymethylhydroxypropyl guar as the gelling agent and the use of a zirconium or titanium cross-

linked guar. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified [the method of *Himes II*] by including a carboxymethylhydroxypropyl guar as the gelling agent and the use of a zirconium or titanium cross-linked guar in view of the teachings of [*Gupta*]. The motivation for the combination of these two references is that these additional materials of [*Gupta*] minimizes the effect of thermal degradation of the gelling polymer in high temperature formations.

(See Final Office Action at ¶ 7.)

To form a basis for a § 103(a) rejection, a combination of prior art references must teach or suggest each element in the claim. MANUAL OF PATENT EXAMINING PROCEDURE § 2142 (2004). However, as discussed in Section III.B. above, *Himes II* does not teach or suggest the use of a fracturing fluid that comprises both an additive for preventing the swelling and migration of formation clays and one or more salts in an amount up to about 3.5% by weight of the aqueous fluid, as recited in claim 13. In fact, *Himes II* teaches against adding salts since they “can be difficult to use and can have detrimental effects upon certain properties of the gelled fluid such as reducing the viscosity produced by a gelling agent in the aqueous fluid in comparison to the viscosity produced by the gelling agent in fresh water.” (See *Himes II* at col. 3, ll. 19-29.) Nor does *Gupta* teach the use of either of these components, as *Gupta* merely discloses fracturing fluids that comprise crosslinked gelling agents. (See *Gupta* at col. 2, ll. 43-50.) Therefore, one of ordinary skill in the art would not understand from these references, either alone or in combination, to use a fracturing fluid that comprises both an additive for preventing the swelling and migration of formation clays and one or more salts in an amount up to about 3.5% by weight of the aqueous fluid, as recited in claim 13.

Because this combination of references does not teach all elements of claim 13, the combination cannot obviate claim 13. Since “a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers,” and since claims 19 and 21-23 depend, directly or indirectly, from claim 13, these dependent claims include the limitations of claim 13, that neither *Himes II* nor *Gupta* teaches or suggests. See 35 U.S.C. § 112 ¶ 4 (2004). Therefore, Applicants respectfully assert that claims 19 and 21-23 are allowable over the combination of *Himes II* and *Gupta*, and respectfully request the withdrawal of the rejections thereto.

SUMMARY

In light of the above remarks, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections. Applicants further submit that the application is now in condition for allowance, and earnestly solicit timely notice of the same. Because this response has been filed within two months of when the Final Office Action was issued, Applicants respectfully request that the Examiner issue an advisory action if the Examiner does not find the claims to be allowable in light of the amendments and remarks made herein. Should the Examiner have any questions, comments or suggestions in furtherance of the prosecution of this application, the Examiner is invited to contact the attorney of record by telephone, facsimile, or electronic mail.

Applicants believe that there are no fees due in association with this filing of this Response. However, should the Commissioner deem that any fees are due, including any fees for extensions of time, Applicants respectfully request that the Commissioner accept this as a petition therefor, and direct that any additional fees be charged to the Deposit Account of Halliburton Energy Services, Inc., No. 08-0300.

Respectfully submitted,



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